

# Notice of Allowability

Application No.

10/797,107

Examiner

Tomasz Ponikiewski

Applicant(s)

HU ET AL.

Art Unit

2165

## -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 3/12/07.
2. ☒ The allowed claim(s) is/are 1-4,6-35,73 and 74.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
  - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
  - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

### Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material

5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

  
JEFFREY GAFFIN  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100

**DETAILED ACTION**

**Remarks**

1. The after non-final amendment filed on March 12, 2007 had been received and entered. Claims 5, 64 and 72 have been canceled. New claims 73-74 have been added. Therefore claims 1-4, 6-63, 65-71 and 73-74 are now pending.

**EXAMINER'S AMENDMENT**

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with John D. Magluyan on June 5, 2007 (attorney of Record).

Withdrawn claims 36-63 and 65-71 have been canceled.

**Listing of Claims:**

3. The application has been amended as follows:  
Replace Claim 1 with:

1. (Currently Amended) ~~Apparatus~~ An apparatus including a processor to  
identify topics of document data, the apparatus comprising:

a word ranker configured to rank words that are present in or representative of  
content of the document data;

a co-occurrence ranker configured to rank co-occurrences of words that are  
present in or representative of the content of the document data;

a phrase ranker configured to rank phrases in the document data;

a words selector configured to select the words with a highest ranking;

a co-occurrence identifier configured to identify which of the co-occurrences with  
a highest ranking contain at least one of the highest ranking words;

a phrase identifier configured to identify the phrases containing at least one word  
from the identified co-occurrences by concatenating consecutive nouns, concatenating  
consecutive proper nouns, and concatenating consecutive adjectives with a final noun;

a phrase selector configured to select one or ones of the identified phrases with a  
highest ranking as ~~the~~ a topic or topics of the document data; and

an outputter configured to output data relating to the selected topics.

Replace claim 15 with:

15. (Currently Amended) The apparatus of claim 16, wherein the classifier is  
configured to weight a topic in accordance with a position in the document data of the  
text segments containing the topic, wherein a topic occurring in at least one of a first

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and last text segment of document data representing a document is given a higher weighting than topics occurring in the other text segments.

Replace claim 16 with:

16. (Currently Amended) Apparatus An apparatus including a processor to identify topics of document data, the apparatus comprising:

- a word ranker configured to rank words that are present in or representative of the content of the document data;
- a co-occurrence ranker configured to rank co-occurrences of words that are present in or representative of the content of the document data;
- a phrase ranker configured to rank phrases in the document data;
- a words selector configured to select the highest ranking words;
- a co-occurrence identifier configured to identify which of the highest ranking co-occurrences contain at least one of the highest ranking words;
- a phrase identifier configured to identify the phrases containing at least one word from the identified co-occurrences;
- a phrase selector configured to select the highest ranking one or ones of the identified phrases as the topic or topics of the document data;
- an outputter configured to output data relating to the selected topics;
- a text splitter configured to split the document data into text segments;
- a classifier configured to classify the selected topics of the distribution in the text

segments which define main and subsidiary topics in the document data, wherein the outputter is configured to output data relating to the classified topics; and

a topic hierarchy identifier configured to identify a topic as being a child or subsidiary topic of another topic when text portions in which that subsidiary topic occurs represent a sub-set of the text portions in which the said other topic occurs, wherein the outputter is configured to output data relating to the identified topic hierarchy.

Replace claim 17 with:

17. (Currently Amended) ~~Apparatus~~ An apparatus including a processor to identify topics of document data, the apparatus comprising:

a word ranker configured to rank words that are present in or representative of the content of the document data;

a co-occurrence ranker configured to rank co-occurrences of words that are present in or representative of the content of the document data;

a phrase ranker configured to rank phrases in the document data;

a words selector configured to select the highest ranking words;

a co-occurrence identifier configured to identify which of the highest ranking co-occurrences contain at least one of the highest ranking words;

a phrase identifier configured to identify the phrases containing at least one word from the identified co-occurrences;

a phrase selector configured to select the highest ranking one or ones of the identified phrases as the topic or topics of the document data;

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an outputter configured to output data relating to the selected topics;  
a text splitter configured to split the document data into text segments;  
a classifier configured to classify the selected topics of the distribution in the text segments which define main and subsidiary topics in the document data, wherein the outputter is configured to output data relating to the classified topics; and  
a topic hierarchy identifier configured to identify a topic as being a child or subsidiary topic of another topic when the text segments in which that subsidiary topic occurs represent a sub-set of the text segments in which the said other topic occurs, wherein the outputter is configured to output data relating to the identified topic hierarchy.

Replace claim 22 with:

22. (Currently Amended) Apparatus An apparatus including a processor to identify topics of document data, the apparatus comprising:

a word ranker configured to rank words that are present in or representative of content of the document data;

a co-occurrence ranker configured to rank co-occurrences of words that are present in or representative of the content of the document data;

a phrase ranker configured to rank phrases in the document data;

a words selector configured to select the highest ranking words;

a co-occurrence identifier configured to identify which of the highest ranking co-occurrences contain at least one of the highest ranking words;

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a phrase identifier configured to identify the phrases containing at least one word from the identified co-occurrences;

a phrase selector configured to select the highest ranking one or ones of the identified phrases as the topic or topics of the document data; and

a summary provider configured to provide summary data on the basis of the selected topics, wherein the summary provider comprises a sentence selector configured to select sentences to use in the summary data;

wherein the sentence selector comprises:

a topic weight assigner configured to assign weights to the topics;

a sentence weight assigner configured to assign weights to sentences in the document data;

a scorer configured to score the sentences by summing the assigned topic and sentence weights;

a selector configured to select the sentence or sentences having the highest score or scores;

a topic weight adjuster configured to relatively reduce the weight allocated to the topic or topics in the selected sentence or sentences, wherein the topic weight adjuster is configured to set to zero the weight of any topic in the selected sentence or sentences;

a controller configured to cause the scorer, selector and topic weight adjuster to a controller configured to cause the scorer, selector and topic weight

adjuster to repeat the above operations until a predetermined number of sentences has been selected for the summary from the document data; and an outputter configured to output the summary data.

Replace claim 26 with:

26. (Currently Amended) Apparatus An apparatus including a processor to identify topics of document data, the apparatus comprising:

- a word ranker configured to rank words that are present in or representative of the content of the document data;
- a co-occurrence ranker configured to rank co-occurrences of words that are present in or representative of the content of the document data;
- a phrase ranker configured to rank phrases in the document data;
- a words selector configured to select the highest ranking words;
- a co-occurrence identifier configured to identify which of the highest ranking co-occurrences contain at least one of the highest ranking words;
- a phrase identifier configured to identify the phrases containing at least one word from the identified co-occurrences;
- a phrase selector configured to select the highest ranking one or ones of the identified phrases as the topic or topics of the document data;
- a summary provider configured to provide summary data on the basis of the selected topics, wherein the summary provider comprises a sentence selector configured to select sentences to use in the summary data;



a chunk identifier configured to identify in sentences selected for a summary chunks that do not contain words in the selected topics; and

a chunk modifier configured to modify the identified chunks wherein the chunk modifier is configured to modify chunks by causing them to be displayed which place less emphasis on the modified chunks; and

an outputter configured to output the summary data,  
wherein the outputter is configured to output the summary data and the chunk modifier is configured to modify chunks to cause, when the outputter provides output data for display by a display, the modified chunks to be displayed using at least one of a smaller font size, a different font, a different font characteristic and a different font colour from the other chunks.

Replace claim 74 with:

74. (Currently Amended) A computer-executable program stored on a computer-readable storage medium, the program ~~for identifying topics of document data, the program comprising code for~~ when executed by a computer, performing the steps of:

ranking words that are present in or representative of content of the document data;

ranking co-occurrences of words that are present in or representative of the

content of the document data;

ranking phrases in the document data;

selecting the words with a highest ranking;

identifying which of the co-occurrences with a highest ranking contain at least one of the highest ranking words;

identifying the phrases containing at least one word from the identified co-occurrences by concatenating consecutive nouns, concatenating consecutive proper nouns, and concatenating consecutive adjectives with a final noun;

selecting one or ones of the identified phrases with a highest ranking as the topic or topics of the document data; and

outputting data relating to the selected topics.

### **Allowance**

4. Claims 1-4, 6-35, 73 and 74 are allowed over the prior art made of record.
5. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reason for Allowance."

### **Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tomasz Ponikiewski whose telephone number is (571)272-1721. The examiner can normally be reached on 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey A. Gaffin can be reached on (571)272-4146. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Tomasz Ponikiewski  
June 5, 2007